

Inequality Story Studio

Turn inequality symbols into real-world situations.

GRADE 7 • 7.PFA.4.e

7.PFA.4.e "Create a verbal situation in context given a one or two-step linear inequality in one variable."

NAME _____

DATE _____

BUILD THE STORY

Let x name a quantity that can change, such as items, minutes, or points. A number multiplied by x can describe a rate, and a number added or subtracted can describe a fixed amount. Use words such as at most, at least, more than, or fewer than to match the inequality sign.

WORKED EXAMPLE

Create a verbal situation for $7x + 11 > 39$.

1. Let x represent the number of robotics workshops attended.
2. Match $7x$ to a cost of \$7 per workshop.
3. Match 11 to a one-time registration fee.
4. Use more than for the $>$ symbol.

Answer: A robotics club charges an \$11 registration fee and \$7 for each workshop. The total cost for x workshops is more than \$39.

PRACTICE 6 problems

- 1** Create a verbal situation for $x \leq 14$. Tell what x represents.

ANSWER _____

- 2** Create a verbal situation for $x > 5$. Tell what x represents.

ANSWER _____

- 3** Create a verbal situation for $3x < 24$. Tell what x represents.

ANSWER _____

- 4** Create a verbal situation for $x / 4 \geq 6$. Tell what x represents.

ANSWER _____

- 5** Create a verbal situation for $2x + 9 \leq 31$. Tell what x represents.

ANSWER _____

- 6** Create a verbal situation for $5x - 3 > 22$. Tell what x represents.

ANSWER _____

APPLY IT Show your work

- 1** A game tournament has an entry fee and a cost for each round played. Create a situation for $3x + 14 \leq 32$. Tell what x represents.

WORK SPACE

ANSWER _____

- 2** A student sells custom stickers and then buys supplies. Create a situation for $4x - 5 > 23$. Tell what x represents.

WORK SPACE

ANSWER _____

CHALLENGE One step up

CHALLENGE

Create a situation for $8x + 16 > 64$ where x must be a whole number. Then state the least value of x that makes the situation true and explain why.

PART 1 • PRACTICE

#	PROBLEM	ANSWER
1	Create a verbal situation for $x \leq 14$. Tell what x represents.	At a lunch table, x represents the number of students sitting there. The table can have at most 14 students.
2	Create a verbal situation for $x > 5$. Tell what x represents.	In a video game, x represents the number of levels completed. A player has completed more than 5 levels.
3	Create a verbal situation for $3x < 24$. Tell what x represents.	At a music download shop, x represents the number of songs bought. At \$3 per song, the total cost is less than \$24.
4	Create a verbal situation for $x / 4 \geq 6$. Tell what x represents.	A student reads for 4 days, and x represents the total number of pages read. The average number of pages read each day is at least 6.
5	Create a verbal situation for $2x + 9 \leq 31$. Tell what x represents.	A print shop charges \$9 to start an order and \$2 for each photo print. The cost of x prints is no more than \$31.
6	Create a verbal situation for $5x - 3 > 22$. Tell what x represents.	A student earns \$5 for each car washed, and x represents the number of cars washed. After spending \$3, the student has more than \$22.

PART 2 • APPLY IT

- A game tournament charges a \$14 entry fee and \$3 for each round played. The cost for x rounds is at most \$32.** x is the number of rounds. The \$14 is the entry fee, $3x$ is the round cost, and $\leq$ means at most.
- A student earns \$4 for each custom sticker sold, and x represents the number of stickers sold. After spending \$5 on supplies, the student has more than \$23.** x is the number of stickers sold. The student earns $4x$ dollars, spends \$5, and has an amount greater than \$23.

CHALLENGE

A gaming lounge charges a \$16 entry fee and \$8 for each hour played. The cost for x hours is more than \$64. The least whole-number value of x is 7 because $8x + 16 > 64$ means $8x > 48$, so $x > 6$.

Accept any complete, realistic situation that correctly defines x and matches every number, operation, and inequality sign. Wording such as no more than for $\leq$, at least for $\geq$, and more than for $>$ is acceptable.